

## **ABSTRACT**

**[00066]** A multi-charged particle beam tool for semiconductor wafer inspection or lithography includes an array of electron beam columns, each having its own electron or ion source. The objective lenses of the various electron beam columns, while each has its own pole piece, share a common single magnetic coil which generates a uniform magnetic field surrounding the entire array of electron beam columns. This advantageously improves the spacing between the beams while providing the superior optical properties of a strong magnetic objective lens. When used as an inspection tool, each column also has its own associated detector to detect secondary and back-scattered electrons from the wafer under inspection. In one version the gun lenses similarly have individual pole pieces for each column and share a common magnetic coil.